

# Forest and Wildlife Benefits on Private Land



## Woodland Protection and Wildlife Management

**T**hroughout history, many forces have damaged Missouri's forests. Natural and man-made disasters such as fires, weather, insects and disease are constantly destroying single trees or groups of trees. Woodland protection is to protect wildlife habitat, save trees for their wood products value, maintain watershed cover, and guard human lives and property.

Some trees and wildlife thrive on the stability and tranquility of an undisturbed forest. Others depend on disturbance for their very existence. Forest protection is concerned with livestock grazing, erosion, fire, insects, disease and severe weather. Some of these concerns can be controlled, others cannot. The resulting damage and change can often be used to benefit wildlife.

### Grazing

For years, Missouri landowners have let domestic livestock graze in hardwood forests. The forests are cool in the summer and sheltered from wind in the winter. Although the landowners have good intentions, grazing has damaged forest, wildlife and soil resources.

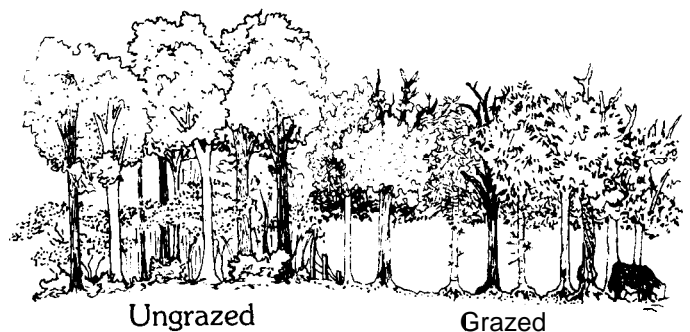
After years of grazing, a forest begins to change its looks. Livestock eat young tree seedlings and saplings. Thus, when trees are harvested or die of old age, there are no young trees to take their place.

Typically, livestock like to eat the more expensive trees, while they leave the less desirable trees. Oak saplings are usually among the first to go. Hickory saplings are apparently less tasty and are more apt to survive. They also handle soil compaction much better. Livestock avoid honeylocust thorns, but will eat the seed pods and spread undigested honeylocust seeds everywhere.

Wildlife food and cover disappear when hungry livestock eat and destroy everything within their grazing reach. The "browse line" in a grazed forest is very easy to see, and wildlife that need low-growing plants have difficulty surviving in these grazed woodlands.

Grazed woodlands are also less healthy and vigorous than other forests, and their trees produce less wildlife food. Livestock may compete for a forest's supply of acorns, leaving less for wildlife.

Ungrazed forests often produce soil faster than it erodes. This is because leaves accumulate on the forest floor and gradually decompose into the soil. Soil erosion in a grazed woodland can be 100 times greater than erosion in ungrazed woodland. Large roots and hairlike feeder roots are exposed to the damage of trampling hooves as the soil erodes from around the base of a tree trunk. Once exposed and damaged, insects and disease have free entry into the roots.



*An obvious "browse line" forms in grazed forestland, destroying layers of wildlife habitat.*

Livestock also compact the soil, which causes real problems for trees. The small pores in the soil that allow tree roots to get air and water are sealed off. Rainwater that should soak into the ground simply runs off the surface. The weakened trees are less drought tolerant, and are more vulnerable to attacks from insects or disease.

Hardwood forests produce very little forage for livestock. One good acre of well managed pasture with either cool or warm season grasses is worth 20 to 40 acres of woodland pasture. Livestock shelter needs can be met by

limiting use to only a small area of woodland. A fence can help return grazed woodland to good wildlife habitat.

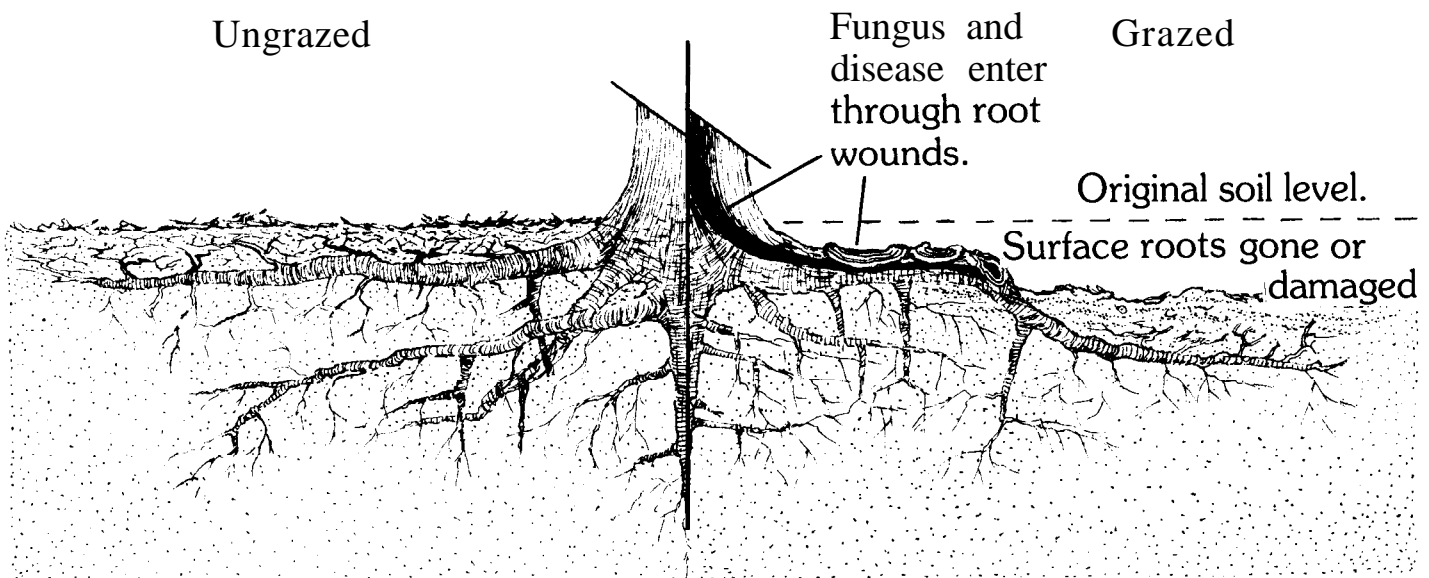
## Erosion

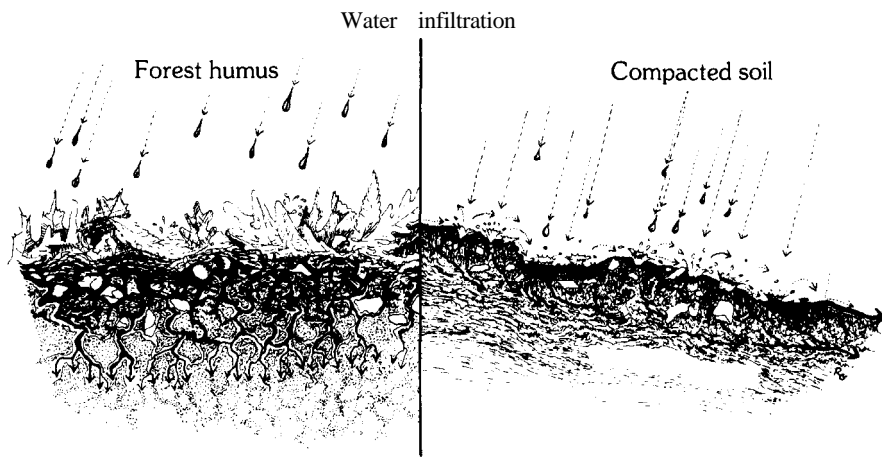
Forest cover is a sure protection against soil erosion. Leaves on the forest floor act much like shingles on a roof, protecting it from rain. Plus, leaves allow forest soil to absorb rainwater faster than it can run off.

Grazing is the leading cause of soil erosion damage in Missouri woodlands. Poor forest management practices

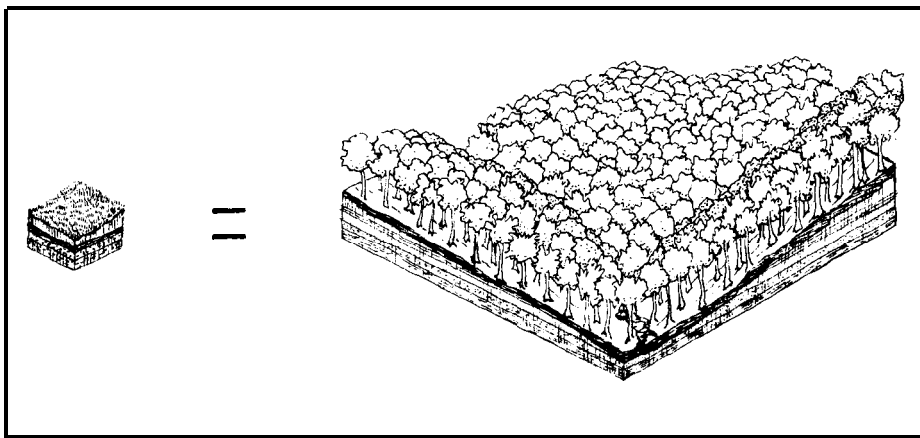


*Livestock grazing tramples the soil (above), exposing tree roots to a variety of damage (below).*





*Water infiltration is greatly reduced in soil compacted by grazing.*



*It takes 20 to 40 acres of woodland pasture to produce as much forage as one acre of grassland.*

can also be a major cause. Proper placement of access roads and trails, and follow-up treatment after tree harvests can reduce erosion problems, especially on highly erodible soils, steep sites and long slopes. When planning a harvesting operation in a woodland, consider the following:

1. Avoid logging during wet seasons on deep or soft soils. Rutted roads and trails increase gully formation.
2. Keep skid trails and logging road grades below 10 percent whenever possible.
3. Leave a buffer strip of protected vegetation between streams and any nearby roads, skid trails or other areas where soil has been disturbed. Avoid logging in or close to streams.
4. Install frequent water breaks on logging roads and skid trails to divert water off of roads.

The recommended spacing between waterbreaks is:

Road grade	Approximate distance
5%	125 feet
10%	80 feet
15-20%	50 feet
25+%	40 feet

5. Seed log landings and roads after logging operations to control erosion, to maintain open conditions for future use, and to provide wildlife habitat.

## Fire

Forest fires damage not only trees, resulting in economic loss, but also soil, water quality and wildlife habitat. For these reasons, a managed woodland should have a fire prevention plan.

Trees are seldom killed outright. Rather, they are less healthy and vigorous, which reduces wood quality and growth. The time of year and the weather conditions on the day of the fire are especially important to the extent of the damage. For example, spring fires are very damaging to young trees and to the wildlife nesting during this season.

Many fire control features can serve dual purposes. For example, fire breaks can be access roads, trails or woodland openings. When properly cared for and seeded, these fire breaks and other erosion control measures can also benefit wildlife habitat. Water holes developed for wildlife can also be a water source for fire fighting.

If a woodland is damaged by fire, the manager must plan the future direction for the forest and wildlife man-

agement. Priority should be given to prevent further soil erosion on the damaged woodland. Time and fire prevention will allow a natural protective layer of leaves to re-develop on top of the exposed soil.

Severity of the fire damage to the overstory trees will decide which of three basic techniques is needed to return the woodland to productivity:

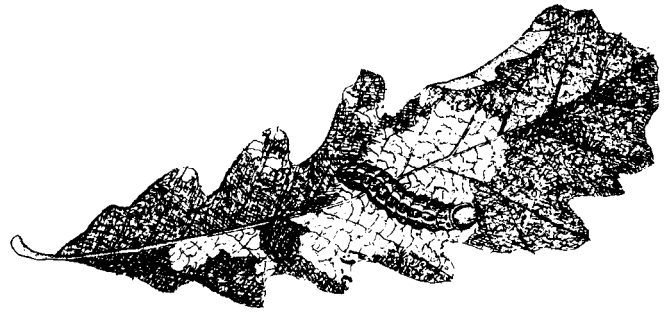
1. Harvest all salvageable trees and regenerate the area,
2. Apply a sanitation cut to remove the most severely damaged trees from the stand,
3. Leave the woodland to recover on its own.

## Insect And Disease

Few insect attacks in natural woodlands are destructive enough to warrant our help. Only in extreme cases does economic loss justify chemical applications to control a pest. Fortunately, natural forces usually bring insect and disease epidemics back to tolerable levels.

Wildlife populations help keep insect pests under control by using them as an important food source. In unmanaged forests, insect and disease attacks create openings by killing individual trees or small groups of trees. This stimulates new growth and creates dead trees which are all important to wildlife.

Any time trees are under stress they are more vulnerable to insect and disease. The greater the stress, the greater the likelihood of severe damage. Ways to eliminate problems that are causing trees to grow under stress include thinning young stands or harvesting over-mature trees. Wildlife habitat improvement should be the same as in any harvest or forest improvement practice.



*Insect pests are also food for wildlife and are often kept in check by natural forces.*

## Weather

No matter how good a forest management system is, it still cannot control the weather. Wind and lightning can damage or destroy individual trees. Larger areas of forest can be destroyed by drought, wind, flood, hail or severe ice storms. When this happens, new stands of trees can be planted, and wildlife needs cared for while salvaging damaged trees.

Weather damage must be taken in stride. Damaged trees provide wildlife with insects for food and cavities for homes. The extent and severity of the damage should be inspected as quickly as possible to determine the next course of action. The best defense against any of these problems is an active forest management program to maintain a diversity of healthy, vigorously growing trees.

